STOP LOOKING FOR Vol. III, No. 4, Dec. 1981--- IT WAS NEVER ISSUED!!

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# SHORTIA

## A NEWSLETTER

## OF THE

## WESTERN CAROLINA BOTANICAL CLUB

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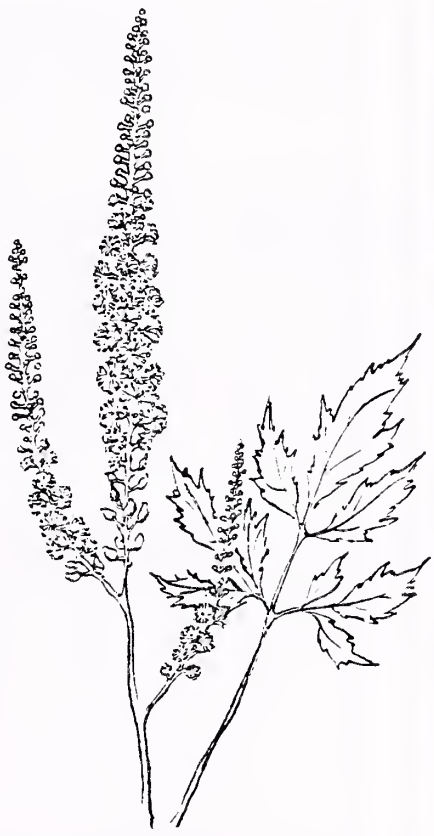
# LOOK AGAIN !

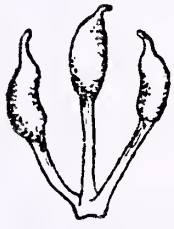
Only rarely do we find it necessary to resort to using a hand lens in order to distinguish between two species of plants that are as tall as we are, but the genus Cimicifuga, in the buttercup family, proves that it can happen.

Cimicifuga racemosa (popularly known as Bugbane, Black Cohosh or Black Snakeroot) is so conspicuous and so familiar that we feel confident of being able to call it from twenty feet away without fear of contradiction, but in doing so we often forget that there is another species, C. americana.

There are not many factors to help us avoid misidentification, either. Vegetatively, the two are very similar, although C. americana does not achieve the stature of the larger specimens of C. racemosa. The former is strictly a mountain species and is restricted to the southern part of the Appalachians at that - but of course they both share that territory. It tends to bloom later, but in a given area their blooming seasons can pretty much coincide.



All this overlapping would make it difficult to separate them were it not for the fact that a close look at an individual flower will take care of the problem quickly and positively:



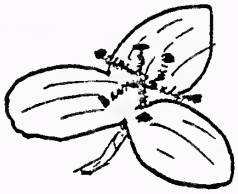
Cimicifuga racemosa has but a single pistil, which is stout and sessile, with a truncate style. C. americana, on the other hand, has from three to eight pistils each of which has a slender stalk, and the styles are awl-shaped.

There are other slight differences, mostly in the follicles and seeds, but if you have the plant in flower this is all you need to know.

Dick Smith

## THE SPIDERWORT - RADIATION DETECTOR

This is an account about one of our attractive roadside wildflowers that may become a useful tool for mankind. We are acquainted with it, the early spiderwort known as Tradescantia with its three equally-rounded lavender petals surrounding the six quite hairy stamens, each bearing a bright yellow anther.



Recent studies by the Japanese scientist, Dr. Sadao Ichikawa in Japan and the United States, indicates that cloned or asexually-grown Spiderworts can be an ultra-sensitive monitor of ionizing radiation.

He found that the cells of the hairs of the stamens change from blue to pink in a few days after exposure to as little as 150 millirems of radiation. Federal guidelines urge that the limit for exposure to man-made radiation sources be no more than 170 millirems/year. The average person receives about 100 millirems/year from the natural background.

Dr. Ichikawa claims that this color indicator provides a greater sensitivity to low level radiation than mechanical indicators. This claim is made because mechanical instruments measure external exposure only, which is considered not as meaningful a measurement for a living biological system. Because living systems take up radiation internally, and indeed accumulate it, this scientist said he felt the spiderwort was an especially useful monitor since it showed the effects of internal exposure a few days after the fact. A human population, however, would take decades, or even years to show the effects of radiation-induced mutation.

Dr. Ichikawa is continuing his research by having other scientists grow plants of the cloned spiderwort around nuclear plant facilities in the United States. So, the spiderwort could become not merely a pretty roadside flower, but a real lifesaver.

(Condensed from New York Times - April 25, 1979)

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## PLANT SYMBIOSIS

Broadly defined, symbiosis is an association of two different kinds of living organisms sometimes for mutual benefit.

A number of these associations occur in plant life, of which a few come to mind and I should like to share with you.

Perhaps the better known relationship is that which exists between our Pink Lady-slipper (Cypripedium acaule) and a soil fungus. As we all know, this Lady-slipper thrives best in the rich loam of the woods.

It has been demonstrated that the related fungus, by means of its network of threads (mycelium),hastens the decay of the organic material that accumulates in the woods, increases its acidity, and thereby prepares a growing medium favored by the Lady-slipper. Just how the plant is beneficial to the fungus is not too well known; but the relationship is essential. Transplanting a Pink Lady-slipper is not often successful and only so if a considerable amount of the fungus-infused wood loam accompanies it.

Let us consider the Lichens. They are symbiotic associations in which a fungus and an alga produce a joint body--each benefiting from this association. The alga being a green plant capable of photosynthesis, produces food for the fungus which, in turn, supplies moisture, shelter, and minerals for the alga.

Cross section of a typical lichen shows that the matted threads (mycelium) of the fungus are concentrated at the bottom where they attach to rock surfaces on which the lichen usually grows.

Lichens are slow but efficient soil producers, disintegrating the rocks by chemical action.

The generic name of Beech-drop is a give-away: Epifagus, from the Greek epi= upon, and phagos=the Beech.

This rather insignificant, slender, much-branched plant is always found around the base of our native Beech trees. Although it produces its own food, it cannot grow unless it is attached to roots of the Beech, from which it receives its water and minerals.

In late August the False Foxglove (Aureolaria virginica) shows its bright yellow flowers. They are usually found in colonies and if we look up we find they are growing in a grove of White Oak trees. However, this is not a condition of true symbiosis. It is more a relationship of the two plants where the Foxglove is parasitic on the roots of the White Oak.

HK

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## RULES FOR PRONUNCIATION

At one time or another, we all might as well face this issue head on!

Most everyone has his own pet way of pronouncing the scientific names of our wild plants and should be given due consideration and credit for his own determination.

There are, however, some occasions when two persons having distinct and confirmed differences, actually have difficulty in conducting floral communication!

Other problems occur. Frequently I have had the temerity of correcting some one else's plant pronunciation and find, with humility upon consulting an authority like Gray's Manual, that I was dead wrong.

But, let us all recognize--there is one correct way to pronounce any given scientific plant name. A number of excellent publications are available listing many plant names with phonetic spelling and indicating vercal accents. Useful, to be sure, but unhandy. So, perhaps it might appeal to some of us who wish to be correct, to learn by using the accepted rules on the following page.

# RULES FOR PRONUNCIATION

Use the English sounds of the Latin vowels and consonants while using the classical Latin accenting.

Grave accent ( ` ) denotes a long vowel
and
Acute accent ( ´ ) denotes a short vowel

## Vowels

1. Final vowels have long sound (alsìne, al-sì-nee), except "a" which is "ah" (Vernà, Vernah)
2. Final es sounds like "ease"
3. Y is always a vowel with soft sound of i (diphýllus)
4. Two vowels together when not a diphthong are always sounded separately (filifolia - fi-li-fò-li-ah)

## Diphthongs

1. ae and oe have the sound of long (e) in "me"
2. au sounds like (aw) in "awful"
3. ei sounds like (i) in "kite"
4. eu sounds like (u) in "neuter"
5. Diphthongs are always classed as long ( ` ) vowels

## Consonants

1. C and g have soft ( ) sounds of s and j respectively when followed by e, i, y, ae, or oë. Ex. (Cèdrus - See-drus), (gynándra - ji-nan-dra) Otherwise, c has the hard sound of k and g the hard sound of g as in "go" Ex. cándidus - kan-di-dus; glàbrus - gla-brus
2. When the word is begun by one of the following pairs of consonants the first letter is silent: cn, ct, gn, mn, pn, ps, pt, tm. Ex. cnicus - ni-kus; ctenium - tè-ni-um; psyllium - sil-i-um

## Accenting

1. The last syllable is never accented
2. Words with two syllables are always accented on the first; Ex. àcer - à-ser; and if a vowel, it is the long sound
3. Words of more than two syllables, on the next to the last, if it is long. It is long if it ends in a long vowel, a diphthong, or a consonant. Ex. alsine - al-sì-nee; amoènus - a-mòe-nus
4. When this syllable ends in a consonant, the vowel is short; Ex. decúmbens - de-cúm-bens
5. If the next to last syllable is short, the accent falls on the third syllable from the end. Ex. dracontium - dra-cón-ti-um.

Condensed from Vascular Plant Systematics, pages 72 and 73